MAGNE-HEAD

DATA BULLETIN

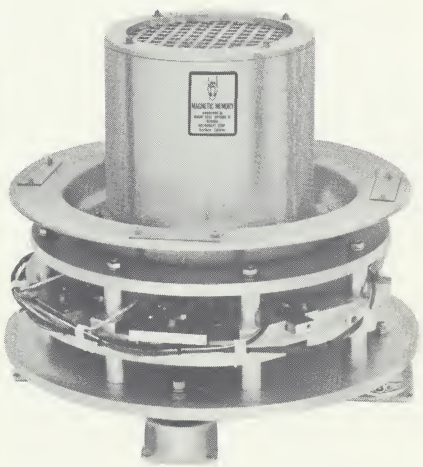
MODEL 91-128 MAGNETIC MEMORY DISC

FEATURES:

- DEPENDABILITY: *Plated metal magnetic coating provides the optimum recording surface—hard and durable.*
- CAPACITY: *Bit packing densities to 1200 per inch NRZ (600 per inch phase modulation, R.B., or R.Z.).*
- SIGNAL TO NOISE RATIO: *26 db.*
- VERSATILITY: *Variable motor speeds available. Record head output and inductance adjustable to any electronic interface.*

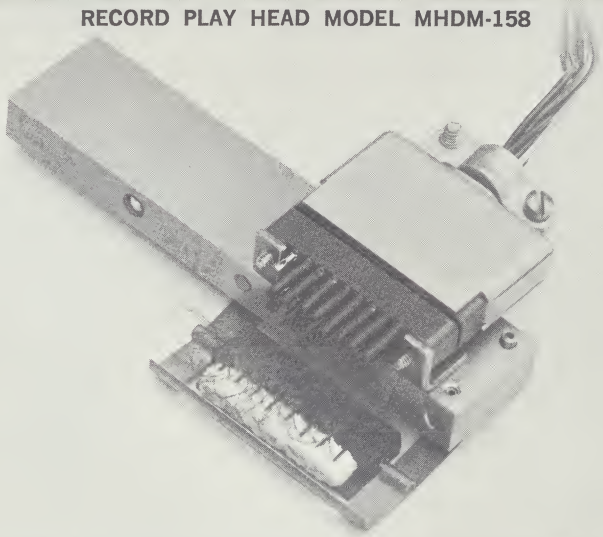
9″ Diameter Disc 128 Tracks

SHOWN WITH COVER REMOVED



Storage capacity 1,500,000 bits

RECORD PLAY HEAD MODEL MHDM-158



8 Tracks Airfloating .015 inch Track width inductance variable

A Division of General Instrument Corporation / 13040 So. Cerise Ave., Hawthorne, Calif. 90250

MAGNE-HEAD

DATA BULLETIN

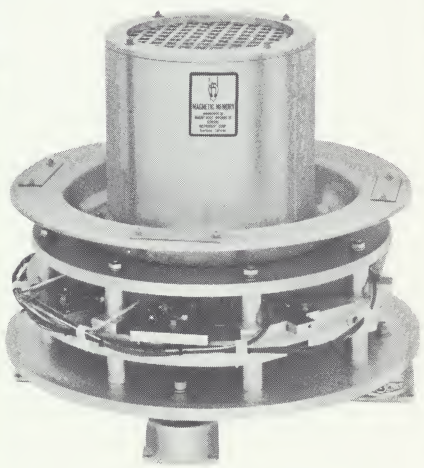
MODEL 71-64 MAGNETIC MEMORY DISC

FEATURES:

- DEPENDABILITY: *Plated metal magnetic coating provides the optimum recording surface—hard and durable.*
- CAPACITY: *Bit packing densities to 1200 per inch NRZ (600 per inch phase modulation, R.B., or R.Z.).*
- SIGNAL TO NOISE RATIO: *26 db.*
- VERSATILITY: *Variable motor speeds available. Record head output and inductance adjustable to any electronic interface.*

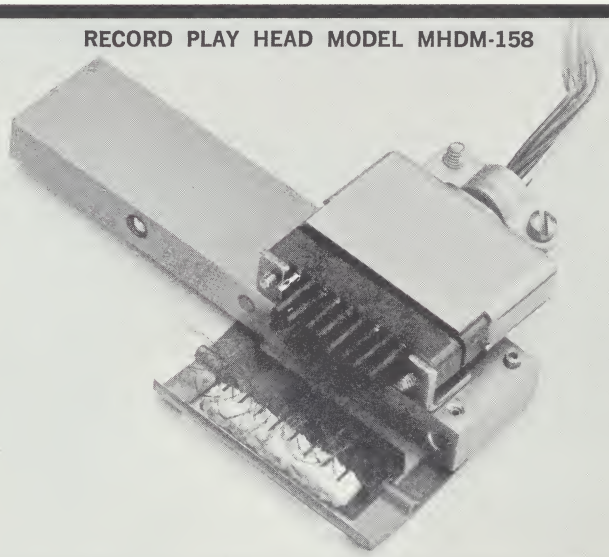
7″ Diameter Disc 64 Tracks

SHOWN WITH COVER REMOVED



Storage capacity 600,000 bits.

RECORD PLAY HEAD MODEL MHDM-158

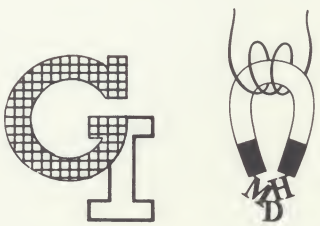


8 Tracks Airfloating .015 inch Track width inductance variable

A Division of General Instrument Corporation / 13040 So. Cerise Ave., Hawthorne, Calif. 90250

TYPICAL DISC

SPECIFICATIONS



MAGNE-HEAD

A Division of General Instrument Corporation

MODEL #91-64 DISC MEMORY

1.0 Maximum Capacity:	736,000
1.1 Number of Discs:	One (9″ diameter)
1.2 Recording Diameters:	8.5″ maximum 6.5″ minimum
1.3 Tracks/Radial Inch:	32
1.4 Track Width:	.015″
1.5 Bits/Track:	11,500 maximum
1.6 Maximum Packing Density:	533 bits/inch
1.7 Number of tracks:	67 as follows:
1.7.1 64 data tracks	
1.7.2 1 clock track (8192 bits)	
1.7.3 1 synch track	
1.7.4 1 register track	
1.8 Registers:	
1.8.1 1 register track with spacing between read and write head to be approximately 800 bits.	
1.9 Magnetic heads	
1.9.1 Half Coil Inductance	50 microhenries ±10%
1.9.2 Unbalance between the two half coils of each head will be less than 5%	
1.9.3 Gap Width:	.00025″
1.9.4 Write Current required for full saturation:	100 milliamperes maximum
1.9.5 Playback Amplitude:	50 millivolts minimum
1.9.6 Amplitude Modulation:	15% maximum
1.10 Type of Recording:	Phase Modulation
1.11 Noise:	
1.11.1 Random noise from any DC erased track will be less than 10% of minimum playback amplitude	

1.12 Drive System:	Integral Induction Motor
1.12.1 Speed:	3600 RPM (Less 5% slip)
1.12.2 Power:	115V, 60 CPS, single phase
1.12.3 Starting Device:	Single Phase Drives require start and run capacitors
1.13 Bearings:	
1.13.1 Super Precision Grade 7 preloaded ball bearings are used with a design life of 10 years.	
1.13.2 Bearings are grease lubricated for the lifetime of the bearings	
1.14 Physical Package:	
1.14.1 Axis of Rotation:	Vertical
1.14.2 Overall Size:	13″ diameter x 11″ high
1.14.3 Total Weight:	45 lbs.
1.14.4 Isolator Mounts:	4 Mounts providing 90% isolation at the rotational speed frequency
1.14.5 Finish: — (Structure)	Golden Iridite
1.14.6 Finish: (Dust Cover)	Ivory Enamel
1.15 Environmental Limitations: — (Operating)	
1.15.1 Ambient Temperature:	50°F to 100°F
1.15.2 Thermal Shock:	No restriction within ambient range
1.15.3 Humidity:	0 to 95%
1.15.4 Dust Cover Removal:	No restriction within ambient range
1.16 Environmental Limitations: (Non-Operating)	
1.16.1 Ambient Temperature:	0°F to 180°F
1.16.2 Storage Time:	One year without relubrication of bearings

MODEL #134-512 DISC MEMORY

1.0 Maximum Capacity:	8,192,000 Bits
1.1 Number of Discs:	Four (13" Diameter)
1.2 Recording Diameters:	12.5" Maximum 9.3" Minimum
1.3 Tracks/Radial Inch:	40
1.4 Track Width:	.015"
1.5 Bits/Track:	16,000 Maximum
1.6 Maximum Packing Density	548 Bits/Inch
1.7 Number of Tracks	516 as follows
1.7.1 4 Timing Tracks	
1.7.2 512 General Storage Tracks	
1.7.3 Registers, if required, will reduce the number of general storage tracks by approximately 4 tracks per register	
1.8 Registers:	
1.8.1 Minimum Spacing: at maximum density	64 Bits
1.9 Magnetic Heads	(To be specified for a particular application)
1.9.1 Half Coil Inductance:	100 Microhenries Maximum 15 Microhenries Minimum
1.9.2 Unbalance between the two half coils of each head will be less than 5%	
1.9.3 Gapwidth:	.00025"
1.9.4 Write current required for full saturation:	(Depends on head selected)
Probable Range:	60 to 150 Milli-amperes
1.9.5 Playback Variation:	3 to 1
1.9.6 Amplitude Modulation: as defined by the formula	15% Maximum

$$\% \text{ Mod} = \frac{2(\text{Max} - \text{Min})}{\text{Max} + \text{Min}} \times 100$$

1.10 Type of Recording:	Phase Modulation
1.11 Noise:	
1.11.1 Random noise from any DC erased track will be less than 10% of the minimum playback amplitude	
1.11.2 Crosstalk between any head which is reading a register track or a clock track and any other head which is writing will be less than 10% of the minimum playback amplitude.	
1.12 Drive System:	Integral Induction Motor (Synchronous on Special Application)
1.12.1 Speed:	900 RPM, 1800 RPM or 3600 RPM
1.12.2 Power Supply Required:	60 cps 115 V Single Phase 60 cps 220 V Single Phase 60 cps 208 V Three Phase
1.12.3 Starting Device:	Single Phase Drives require start & run capacitors and time delay relay
1.13 Bearings:	
1.13.1 Super Precision Grade 7 Preloaded Ball Bearings are used with a design life of 10 years.	
1.13.2 Bearings are grease lubricated for the lifetime of the bearings	
1.14 Physical Package:	
1.14.1 Axis of Rotation:	Vertical
1.14.2 Overall Size:	17" dia. x 17" high
1.14.3 Total Weight:	120 lbs.
1.14.4 Isolator Mounts:	4 Mounts providing 90% isolation at the rotational speed frequency
1.14.5 Finish: Structure:	Golden Iridite
1.14.6 Finish: Dust Cover:	Ivory Enamel
1.15 Environmental Limitations: — (Operating)	
1.15.1 Ambient Temperature:	50°F to 100°F
1.15.2 Thermal Shock:	No Restriction within ambient range.
1.15.3 Humidity:	0 to 95%
1.15.4 Dust Cover Removal:	Restricted to a clean area
1.16 Environmental Limitations: (Non-operating)	
1.16.1 Ambient Temperature:	0°F to 180°F
1.16.2 Storage Time:	One Year without relubrication of bearings

	MODEL	No. OF DISCS & DIA.	MAX NUMBER DATA TRACKS	BITS PER TRACK MAX	TOTAL BIT CAPACITY	OUTSIDE DIMENSIONS DIA X HIGH	BIT DENSITY INNER TRACK	PRICE SINGLE UNITS	PRICE 10 TO 30 UNITS	PRICE 50 & UP
SERIES 70	71-64	ONE 7″	64	8192	524,288	11″ X 11″	532 Bits/Inch	$ 3,000	$ 2,800	$2,500
	71-128	ONE 7″	128	5200	665,600	11″ X 11″	500 Bits/Inch	$ 4,000	$ 3,600	$3,250
	72-256	TWO 7″	256	5200	1,331,200	11″ X 14″	500 Bits/Inch	$ 6,000	$ 5,200	$4,750
SERIES 90	91-64	ONE 9″	64	11500	736,000	13″ X 11″	533 Bits/Inch	$ 4,000	$ 3,800	$3,500
	91-128	ONE 9″	128	8800	1,126,400	13″ X 11″	533 Bits/Inch	$ 5,000	$ 4,600	$4,250
	92-256	TWO 9″	256	8800	2,252,800	13″ X 14″	533 Bits/Inch	$ 7,000	$ 6,200	$5,750
SERIES 110	111-64	ONE 11″	64	14895	953,280	15″ X 11″	533 Bits/Inch	$ 5,000	$ 4,800	$4,500
	111-128	ONE 11″	128	12200	1,561,600	15″ X 11″	533 Bits/Inch	$ 6,000	$ 5,600	$5,250
	112-256	TWO 11″	256	12200	3,123,200	15″ X 14″	533 Bits/Inch	$ 8,000	$ 7,200	$6,750
SERIES 130	131-64	ONE 13″	64	18200	1,164,800	17″ X 11″	533 Bits/Inch	$ 6,000	$ 5,800	$5,000
	131-128	ONE 13″	128	16000	2,048,000	17″ X 11″	548 Bits/Inch	$ 7,000	$ 6,600	$5,750
	132-256	TWO 13″	256	16000	4,096,000	17″ X 14″	548 Bits/Inch	$ 9,000	$ 8,200	$7,250
	134-512	FOUR 13″	512	16000	8,192,000	17″ X 17″	548 Bits/Inch	$13,000	$11,400	$9,500

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MAGNE-HEAD

A Division of General Instrument Corporation

13040 So. Cerise Ave., Hawthorne, Calif. 90250

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Printed in U.S.A. 2M 8/66/MH66-104

MAGNE-HEAD

DATA BULLETIN

D5000

BULK STORAGE MAGNETIC MEMORY DRUM

FEATURES:

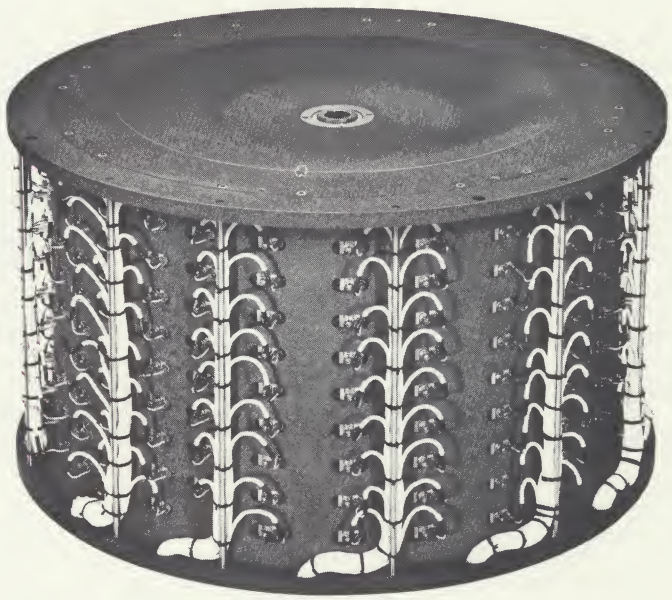
● DEPENDABILITY: *Plated metal magnetic coating provides the optimum recording surface—hard and durable.*

● CONVENIENCE: *Record-play heads may be inserted while the drum is running, with no radial adjustment.*

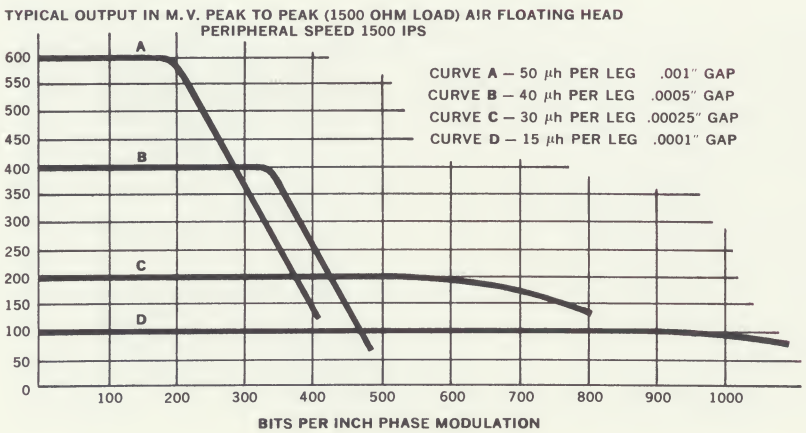
● CAPACITY: *Bit packing densities to 2000 per inch NRZ (1000 per inch phase modulation, R.B., or R.Z.)*

● SIGNAL TO NOISE RATIO: *26 db.*

● VERSATILITY: *Compliance with applicable military specifications—ground, shipboard, airborne.*



Typical section of D5000 Series drum—18″ diameter, 1800 RPM. 20,000,000 bit capacity per section, 4 sections can be stacked to expand total bulk storage memory to as many as 80,000,000 bits.



A PLAYBACK SIGNAL VERSUS PACKING DENSITY GRAPH shows output signal levels over a wide range of frequencies. (Frequency equals peripheral speed in inches per second times packing density in bits per inch phase modulation.) Curves illustrated reflect a peripheral speed of 1500 inches per second. Different speeds produce a roughly linear change in signal level. Outputs shown on the graph are conservatively de-rated. Production experience exceeds these ratings by approximately 25%.

A Division of General Instrument Corporation / 13040 So. Cerise Ave., Hawthorne, Calif. 90250

D5000 MODULAR DRUM

The D5000 Bulk Storage Magnetic Memory Drum employs a new technique of modular section construction which permits the stacking of sections to expand bulk storage capacity. Each modular section has a total memory capacity of 20,000,000 bits and four sections can be stacked to expand total bulk storage memory to as many as 80,000,000 bits. Each individual section incorporates all of the design features of Magne-Head's D50 and D500 Series of Magnetic Memory Drums.

The modular section drum is ideal for computers designed for bulk storage memory and whose total memory varies as a function of application such as in Process Control and Inventory Control. In applications of this nature, where total bulk storage capacity is an unknown or varying factor, the modular section technique of stacking eliminates the necessity of specifying a special drum for each size of memory and the need for anticipating the optimum memory requirement of the application.

To the systems designer, all of this means fewer interface restrictions when integrating the memory subsystem into the total system.

Magne-Head drums meet a broad range of operational requirements because of flexible design within a framework of dependability. Features and design parameters tailored to meet individual application needs include drum size, speed, and motor type... record-play head inductance, head layout, and wiring harness arrangements.

For military systems, D5000 Series drums are designed to meet these typical specifications:

Ground Based:	MIL-E-4970A and MIL-E-4158B
Shipboard:	MIL-E-16400E
Airborne:	MIL-E-5400

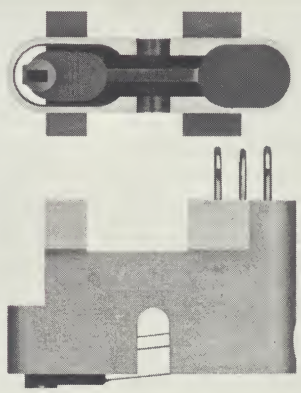
D5000 DESIGN DATA

DIAMETER:	18″ per section
LENGTH:	12″ per section
MAXIMUM NO. OF SECTIONS:	4
ECCENTRICITY:	Less than .000050 inches
BEARINGS:	Class 9; factory sealed and lubricated
MOTOR:	Custom designed integral motor, induction or synchronous
ROTATION SPEED:	900, 1800, 3600 RPM
TRACKS PER INCH:	40 nominal
TOTAL STORAGE CAPACITY:	20,000,000 bits per section
MAXIMUM CLOCK RATE:	2 megacycles
MAGNETIC MEDIUM:	Hard nickel-cobalt plate. By becoming an integral part of the rotating member, the plated surface eliminates dusting and flaking problems inherent with iron oxide coatings. Extreme surface hardness greatly reduces susceptibility to catastrophic failure should foreign matter come in contact with the rotating member.

RECORD-PLAY HEADS

The unique aerodynamic head developed by Magne-Head cuts installation and adjustment time to a fraction of that required for conventional, non-contact heads. To add or replace a head, simply insert it at the desired location and lock it in place, *all without stopping the drum.* Head and head slot design make it virtually impossible to damage either the head or the drum coating during the installation process.

Electrical specifications such as head inductance and drive current requirements may be varied to suit the application.



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D500 DESIGN DATA

All drums in the medium size D500 Series share basic design features. Magne-Head design criteria provide superior performance: more bits per square inch of recording surface, higher output signal levels, and long term maintenance-free operation. To the systems designer, all of this means fewer interface restrictions when integrating the memory subsystem into the total system.

Magne-Head drums meet a broad range of operational requirements because of flexible design within a framework of dependability. Features and design parameters tailored to meet individual application needs include drum size, speed, and motor type... record-play head inductance, head layout, and wiring harness arrangements.

For military systems, D500 Series drums are designed to meet these typical specifications:

Ground Based:	MIL-E-4970A and MIL-E-4158B
Shipboard:	MIL-E-16400E
Airborne:	MIL-E-5400

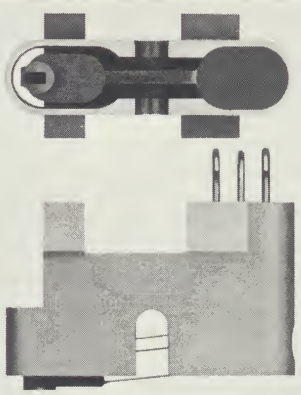
D500 DESIGN DATA

DIAMETER:	6 to 12 inches
LENGTH:	1 to 18 inches
ECCENTRICITY:	Less than .000050 inches
BEARINGS:	Class 9; factory sealed and lubricated
MOTOR:	Custom designed integral motor, induction or synchronous
ROTATION SPEED:	Speed limits are set by rotating member diameter. Maximum speed for D500 Series drums is 12,000 RPM, at a diameter of 6 inches.
TRACKS PER INCH:	40 nominal
TOTAL STORAGE CAPACITY:	Approximate storage capacity ranges between these limits, according to drum size: 6″ diameter x 1″ length— 570,000 bits phase modulation 12″ diameter x 18″ length— 20,000,000 bits phase modulation
MAXIMUM CLOCK RATE:	2 megacycles
MAGNETIC MEDIUM:	Hard nickel-cobalt plate. By becoming an integral part of the rotating member, the plated surface eliminates dusting and flaking problems inherent with iron oxide coatings. Extreme surface hardness greatly reduces susceptibility to catastrophic failure should foreign matter come in contact with the rotating member.

RECORD-PLAY HEADS

The unique aerodynamic head developed by Magne-Head cuts installation and adjustment time to a fraction of that required for conventional, non-contact heads. To add or replace a head, simply insert it at the desired location and lock it in place, *all without stopping the drum.* Head and head slot design make it virtually impossible to damage either the head or the drum coating during the installation process.

Electrical specifications such as head inductance and drive current requirements may be varied to suit the application.



Printed in U.S.A. 1M 10/65

MAGNE-HEAD

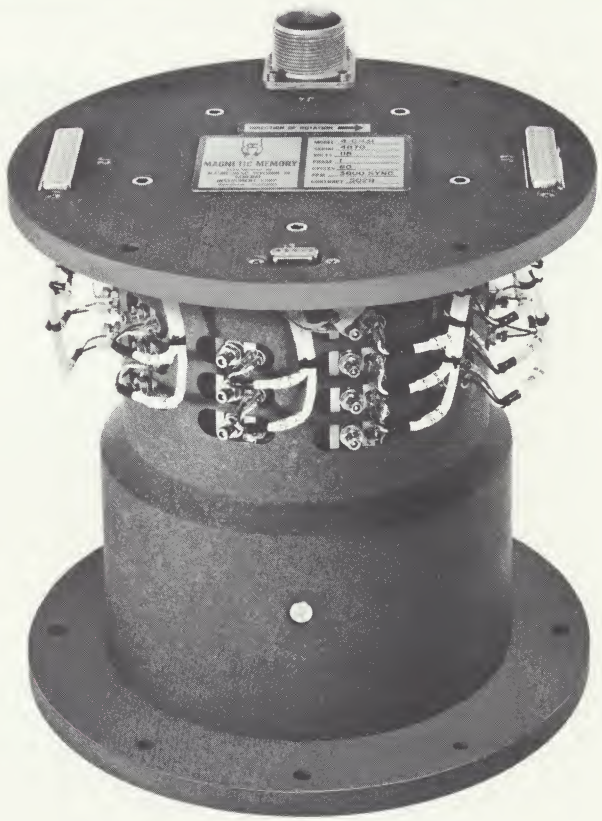
DATA BULLETIN

D50 SERIES

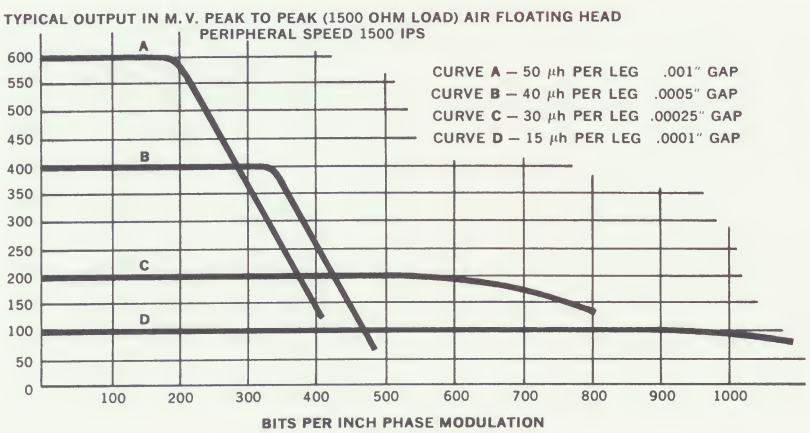
AIRBORNE MAGNETIC MEMORY DRUMS

FEATURES:

- DEPENDABILITY: *Plated metal magnetic coating provides the optimum recording surface—hard and durable.*
- CONVENIENCE: *Record-play heads may be inserted while the drum is running, with no radial adjustment.*
- CAPACITY: *Bit packing densities to 2000 per inch NRZ (1000 per inch phase modulation, R.B., or R.Z.)*
- SIGNAL TO NOISE RATIO: *26 db.*
- VERSATILITY: *Compliance with applicable military specifications—ground, shipboard, airborne.*



Typical D50 Series drum—4″ diameter, 3600 RPM.
Other diameters available in the
D50 Series from 3″ to 6″.



A PLAYBACK SIGNAL VERSUS PACKING DENSITY GRAPH shows output signal levels over a wide range of frequencies. (Frequency equals peripheral speed in inches per second times packing density in bits per inch phase modulation.) Curves illustrated reflect a peripheral speed of 1500 inches per second. Different speeds produce a roughly linear change in signal level. Outputs shown on the graph are conservatively de-rated. Production experience exceeds these ratings by approximately 25%.

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MAGNE-HEAD

DATA BULLETIN

D50 SERIES

AIRBORNE MAGNETIC MEMORY DRUMS

FEATURES:

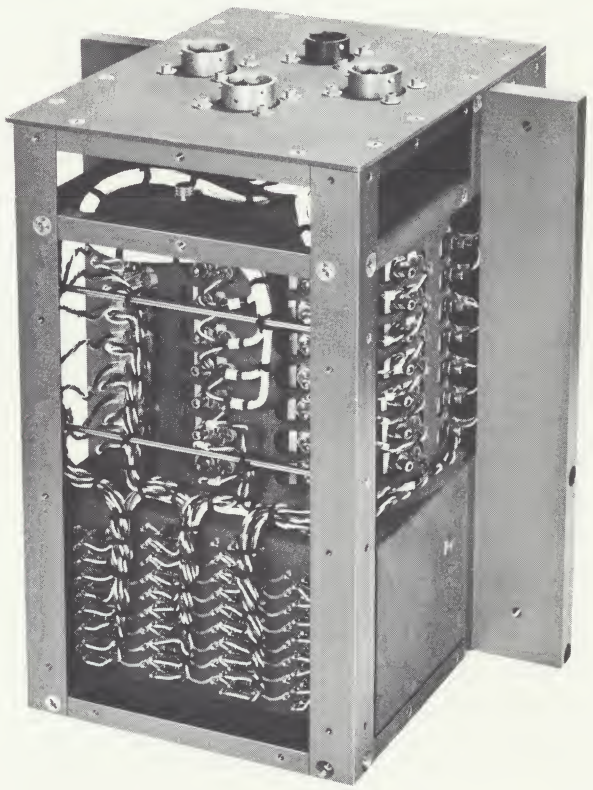
● DEPENDABILITY: *Plated metal magnetic coating provides the optimum recording surface—hard and durable.*

● CONVENIENCE: *Record-play heads may be inserted while the drum is running, with no radial adjustment.*

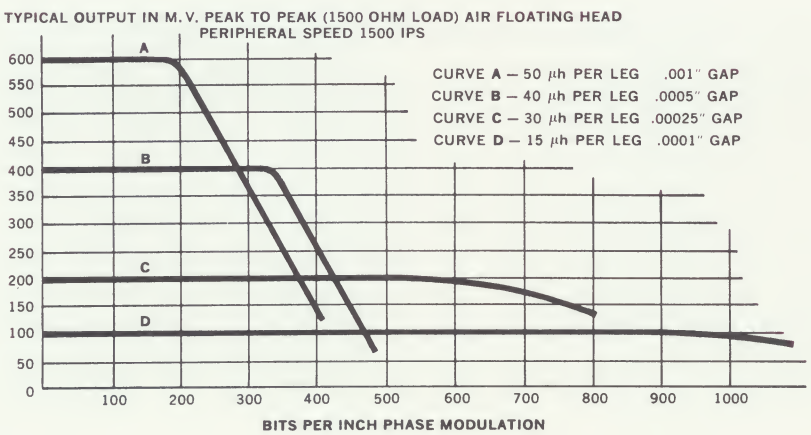
● CAPACITY: *Bit packing densities to 2000 per inch NRZ (1000 per inch phase modulation, R.B., or R.Z.)*

● SIGNAL TO NOISE RATIO: *26 db.*

● VERSATILITY: *Compliance with applicable military specifications—ground, shipboard, airborne.*



Typical D50 Series drum—4″ diameter, 3600 RPM. Other diameters available in the D50 Series from 3″ to 6″.



A PLAYBACK SIGNAL VERSUS PACKING DENSITY GRAPH shows output signal levels over a wide range of frequencies. (Frequency equals peripheral speed in inches per second times packing density in bits per inch phase modulation.) Curves illustrated reflect a peripheral speed of 1500 inches per second. Different speeds produce a roughly linear change in signal level. Outputs shown on the graph are conservatively de-rated. Production experience exceeds these ratings by approximately 25%.

A Division of General Instrument Corporation/13040 So. Cerise Ave., Hawthorne, Calif. 90250

D50 DRUM

All drums in the small to medium size D50 Series share basic design features. Magne-Head design criteria provide superior performance: more bits per square inch of recording surface, higher output signal levels, and long term maintenance-free operation. To the systems designer, all of this means fewer interface restrictions when integrating the memory subsystem into the total system.

Magne-Head drums meet a broad range of operational requirements because of flexible design within a framework of dependability. Features and design parameters tailored to meet individual application needs include drum size, speed, and motor type... record-play head inductance, head layout, and wiring harness arrangements.

For military systems, D50 Series drums are designed to meet these typical specifications:

Ground Based:	MIL-E-4970A and MIL-E-4158B
Shipboard:	MIL-E-16400E
Airborne:	MIL-E-5400

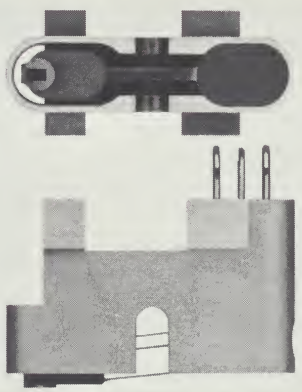
D50 DESIGN DATA

DIAMETER:	3 to 6 inches
LENGTH:	1 to 10 inches
ECCENTRICITY:	Less than .000050 inches
BEARINGS:	Class 9; factory sealed and lubricated
MOTOR:	Custom designed integral motor, induction or synchronous
ROTATION SPEED:	Speed limits are set by rotating member diameter. Maximum speed for D50 Series drums is 24,000 RPM, at a diameter of 3 inches.
TRACKS PER INCH:	40 nominal
TOTAL STORAGE CAPACITY:	Approximate storage capacity ranges between these limits, according to drum size: 3″ diameter x 1″ length—270,000 bits phase modulation 6″ diameter x 9″ length—5,400,000 bits phase modulation
MAXIMUM CLOCK RATE:	2 megacycles
MAGNETIC MEDIUM:	Hard nickel-cobalt plate. By becoming an integral part of the rotating member, the plated surface eliminates dusting and flaking problems inherent with iron oxide coatings. Extreme surface hardness greatly reduces susceptibility to catastrophic failure should foreign matter come in contact with the rotating member.

RECORD-PLAY HEADS

The unique aerodynamic head developed by Magne-Head cuts installation and adjustment time to a fraction of that required for conventional, non-contact heads. To add or replace a head, simply insert it at the desired location and lock it in place, *all without stopping the drum.* Head and head slot design make it virtually impossible to damage either the head or the drum coating during the installation process.

Electrical specifications such as head inductance and drive current requirements may be varied to suit the application.



Printed in U.S.A. 1M 10/65

MAGNETIC MEMORY DRUM DESIGN SHEET

1. GENERAL REQUIREMENTS

MAXIMUM OVERALL HEIGHT ALLOWED _____ (INCHES)

MAXIMUM OVERALL DIAMETER ALLOWED _____ (INCHES)

MOUNTING (VERTICAL OR HORIZONTAL) _____

STARTING TIME ALLOWED _____

ACCESS TIME REQUIRED _____

NUMBER AND TYPE CONNECTORS _____

ENVIRONMENTAL CONDITIONS _____

STORAGE _____ OPERATE _____

VIBRATION _____ SHOCK _____

RECORDING FREQ. _____

BIT PACKING DENSITY (BPI) _____

CROSSTALK MAX. REQUIRED _____

BITS PER TRACK _____

REMARKS — ADDITIONAL REQUIREMENTS, ETC. USE BLANK SHEET IF REQUIRED.

2. TRACK & HEAD REQUIREMENTS

	NO. OF TRACKS REQUIRED	SPARES REQUIRED	NO. OF HEADS PER TRACK		TOTAL HEADS
CLOCK					
WORD MARKER					
SECTOR MARKER					
ORIGIN PULSE				LENGTH	
REGISTER MEMORY					
MAIN MEMORY					
				TOTAL HEADS	

3. DRIVE INFORMATION

MOTOR TYPE _____

PWR. SUPPLY _____ VOLTS _____ PHASE _____ CYCLES _____

4. MAGNETIC DRUM HEAD

HEAD TYPE — CONTACT _____ NON CONTACT _____

INDUCTANCE PER LEG _____ ±10%

RESONANT FREQ. _____ MIN.

LEADS _____ SHIELD REQUIRED _____

RECORD CURRENT _____ MAX.

PLAYBACK SIGNAL _____ MIN.

MAGNE-HEAD DIV. GENERAL INSTRUMENT CORP.

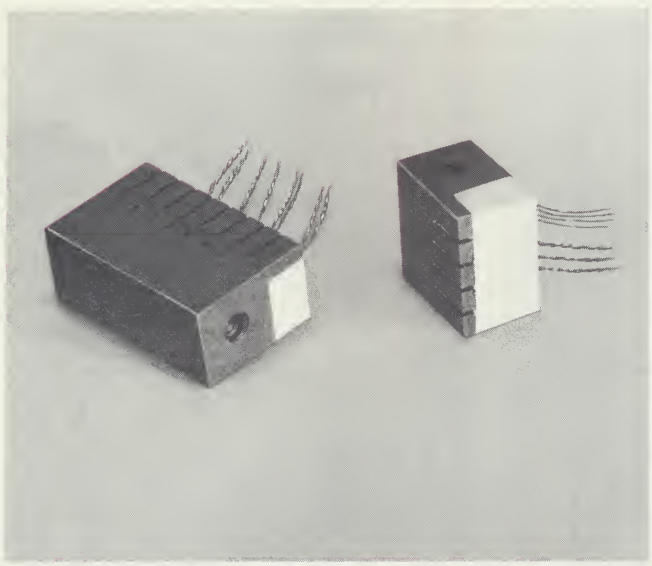
13040 So. Cerise Ave. HAWTHORNE, CALIF. 772-2351 679-3377

Form No. 203

FERROXCUBE
CORPORATION OF AMERICA
SAUGERTIES, NEW YORK

STANDARD FLYING DISC RECORDING HEAD
1 to 12 Tracks

Bulletin 1004



Standard FERROXCUBE Flying Disc Recording Heads.

The Model FD Recording Head offers, for the first time, superior disc recording performance in a commercially available, mass produced, flying head design while filling virtually all application requirements. Recent technological advances, such as extremely high density ferrite construction and molten glass bonding have made this exceptional performance possible. Lower customer costs result from efficient, mass production techniques utilized in the fabrication of these heads.

In addition to this standard line, we also invite inquiries on custom designed heads for specific flying, contact, and video applications.

ELECTRICAL CHARACTERISTICS

Inductance:	63 microhenrys, center-tapped, 30 turns bifilar
Resonant Frequency:	4 MC minimum
Write-Read Crosstalk:	40 db minimum attenuation
Write Current:	125 Ma peak
Readback Voltage:	45 mv p-p
Resolution:	1500 flux changes per inch

MECHANICAL SPECIFICATIONS

Track Width:	.010″ ±.0005
Track Spacing:	.075″ ±.0025 c-c
Core Material:	Ferrite
Case Material:	Non-Magnetic Ferrite
Weight:	2.5 gm (4-track) 5.0 gm (8-track)
Lead Lengths:	Specify on order
Gap Length:	200 microinches

FLYING CHARACTERISTICS

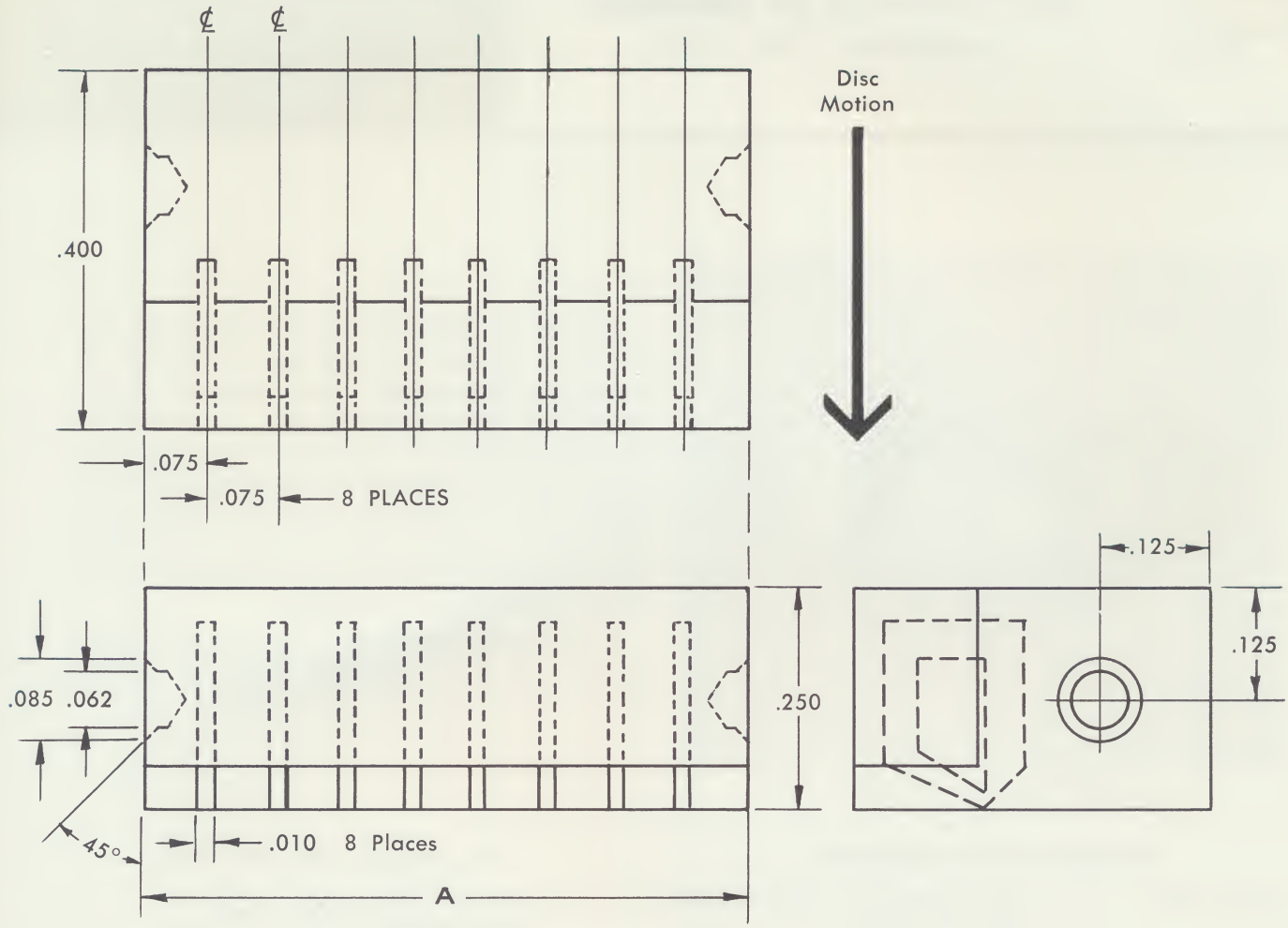
	1000 in./sec.	1500 in./sec.	2000 in./sec.
Force per Track:	80 gm	100 gm	120 gm
Flying Height:	125 microinches	125 microinches	125 microinches

This head is designed to be flown by inserting two 45° cone-pointed rods into chamfered holes. These will act as the physical mount, the means of applying pressure for flying, and as pivot points for the head. A suggested method of mounting is illustrated on the reverse side of this page.

NOTE – The above Electrical and Flying characteristics have been determined with plated nickel-cobalt discs with the following parameters:

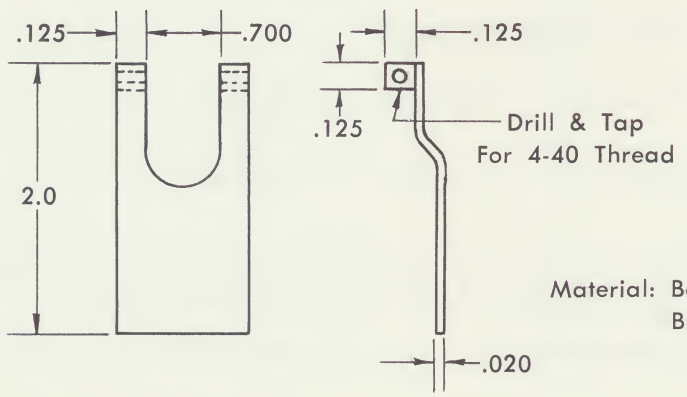
Disc Runout:	less than 0.005″
Surface Finish:	15 microinch
Thickness of Coating:	20-25 microinch
Coercivity of Coating:	600 Oersteds
Reminance of Coating:	6000 Gauss
Surface Velocity:	1500 in./sec.

PHYSICAL DIMENSIONS



A=0.075 (N+1)
N=Number of Tracks
4 and 8 Tracks Standard

SUGGESTED MOUNTING ASSEMBLY



Material: Beryllium-Copper (Spring)
Brass (Block—Silver Solder to Spring)

ORDERING INFORMATION:

Model FD-1 indicates 1-track; Model FD-12 indicates 12-tracks. Use Model Number (FD) and follow with digit indicating desired number of tracks.

(5m 3/64) 1004
Printed in U.S.A.

MAGNE-HEAD

DATA BULLETIN

D5000

BULK STORAGE MAGNETIC MEMORY DRUM

FEATURES:

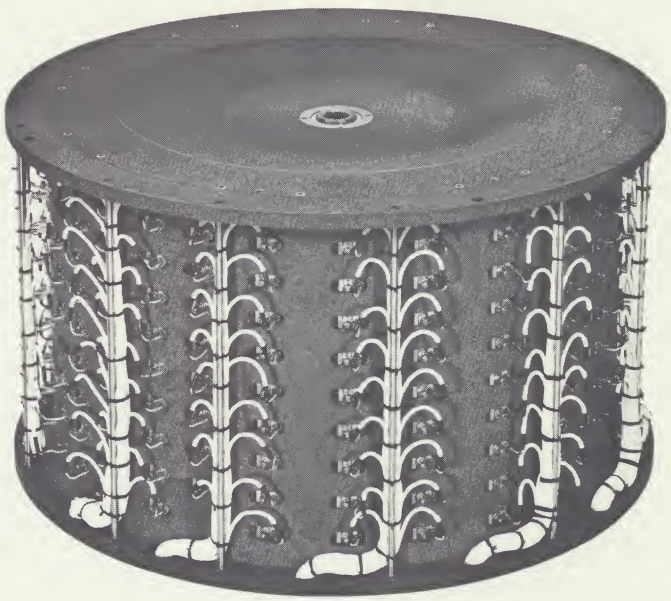
● DEPENDABILITY: *Plated metal magnetic coating provides the optimum recording surface—hard and durable.*

● CONVENIENCE: *Record-play heads may be inserted while the drum is running, with no radial adjustment.*

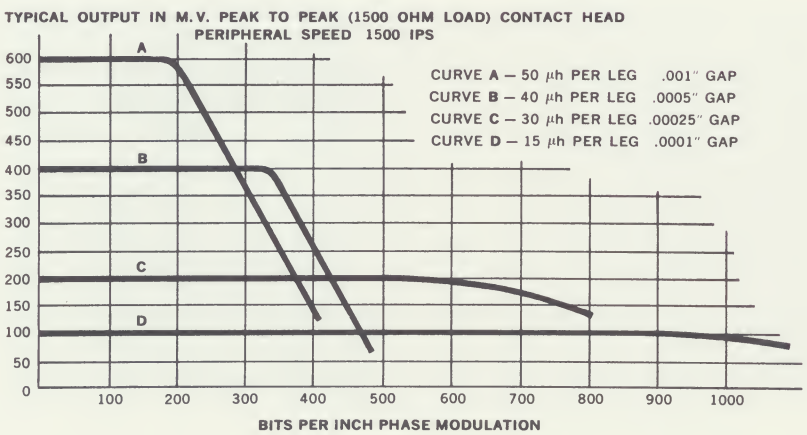
● CAPACITY: *Bit packing densities to 2000 per inch NRZ (1000 per inch phase modulation, R.B., or R.Z.)*

● SIGNAL TO NOISE RATIO: *26 db.*

● VERSATILITY: *Compliance with applicable military specifications—ground, shipboard, airborne.*



Typical section of D5000 Series drum—18″ diameter, 1800 RPM. 20,000,000 bit capacity per section, 4 sections can be stacked to expand total bulk storage memory to as many as 80,000,000 bits.



A PLAYBACK SIGNAL VERSUS PACKING DENSITY GRAPH shows output signal levels over a wide range of frequencies. (Frequency equals peripheral speed in inches per second times packing density in bits per inch phase modulation.) Curves illustrated reflect a peripheral speed of 1500 inches per second. Different speeds produce a roughly linear change in signal level. Outputs shown on the graph are conservatively de-rated. Production experience exceeds these ratings by approximately 25%.

A Division of General Instrument Corporation / 13040 So. Cerise Ave., Hawthorne, Calif. 90250

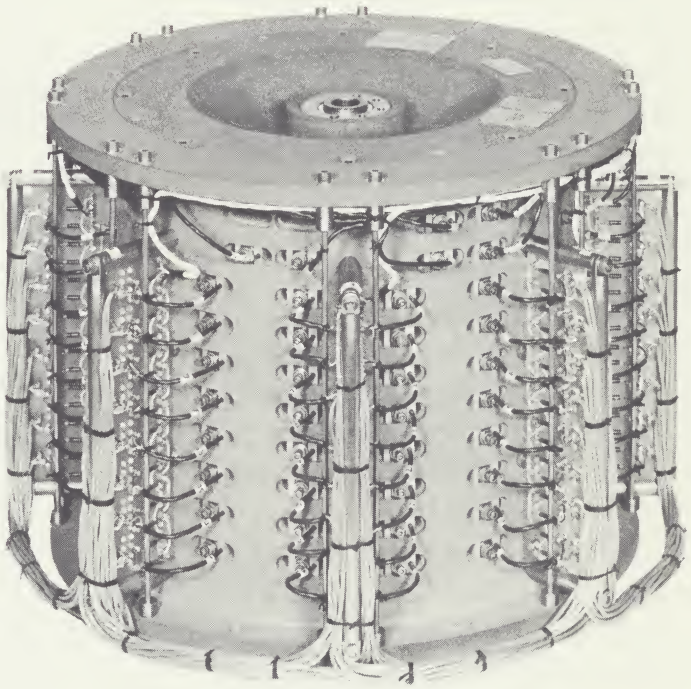
MAGNE-HEAD

DATA BULLETIN

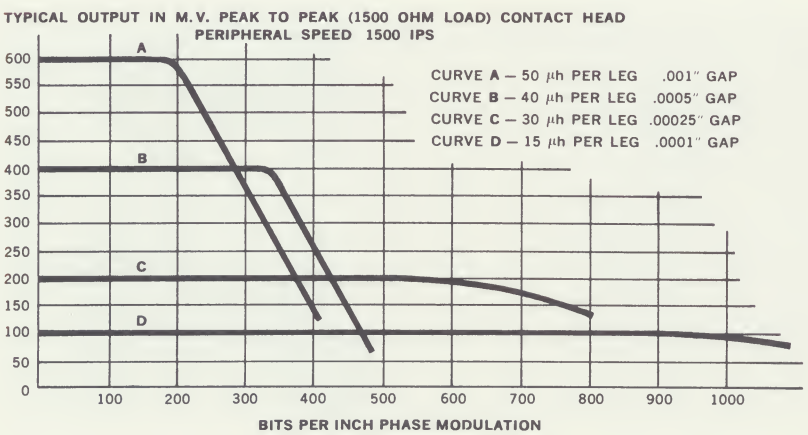
D500 SERIES MAGNETIC MEMORY DRUMS

FEATURES:

- DEPENDABILITY: *Plated metal magnetic coating provides the optimum recording surface—hard and durable.*
- CONVENIENCE: *Record-play heads may be inserted while the drum is running, with no radial adjustment.*
- CAPACITY: *Bit packing densities to 2000 per inch NRZ (1000 per inch phase modulation, R.B., or R.Z.)*
- SIGNAL TO NOISE RATIO: *26 db.*
- VERSATILITY: *Compliance with applicable military specifications—ground, shipboard, airborne.*



Typical D500 Series drum—9″ diameter, 3600 RPM. Other diameters available in the D500 Series from 6″ to 12″.



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D500 DRUM

All drums in the medium size D500 Series share basic design features. Magne-Head design criteria provide superior performance: more bits per square inch of recording surface, higher output signal levels, and long term maintenance-free operation. To the systems designer, all of this means fewer interface restrictions when integrating the memory subsystem into the total system.

Magne-Head drums meet a broad range of operational requirements because of flexible design within a framework of dependability. Features and design parameters tailored to meet individual application needs include drum size, speed, and motor type...record-play head inductance, head layout, and wiring harness arrangements.

For military systems, D500 Series drums are designed to meet these typical specifications:

Ground Based:	MIL-E-4970A and MIL-E-4158B
Shipboard:	MIL-E-16400E
Airborne:	MIL-E-5400

D500 DESIGN DATA

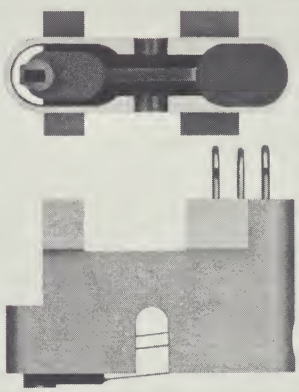
DIAMETER:	6 to 12 inches
LENGTH:	1 to 18 inches
ECCENTRICITY:	Less than .000050 inches
BEARINGS:	Class 9; factory sealed and lubricated
MOTOR:	Custom designed integral motor, induction or synchronous
ROTATION SPEED:	Speed limits are set by rotating member diameter. Maximum speed for D500 Series drums is 12,000 RPM, at a diameter of 6 inches.
TRACKS PER INCH:	40 nominal
TOTAL STORAGE CAPACITY:	Approximate storage capacity ranges between these limits, according to drum size: 6″ diameter x 1″ length—570,000 bits phase modulation 12″ diameter x 18″ length—20,000,000 bits phase modulation
MAXIMUM CLOCK RATE:	2 megacycles
MAGNETIC MEDIUM:	Hard nickel-cobalt plate. By becoming an integral part of the rotating member, the plated surface eliminates dusting and flaking problems inherent with iron oxide coatings. Extreme surface hardness greatly reduces susceptibility to catastrophic failure should foreign matter come in contact with the rotating member.

FOR THE FULL STORY: write or call Magne-Head—area code 213—772-2351/TWX 910-325-6203

RECORD-PLAY HEADS

The unique aerodynamic head developed by Magne-Head cuts installation and adjustment time to a fraction of that required for conventional, non-contact heads. To add or replace a head, simply insert it at the desired location and lock it in place, *all without stopping the drum.* Head and head slot design make it virtually impossible to damage either the head or the drum coating during the installation process.

Electrical specifications such as head inductance and drive current requirements may be varied to suit the application.



MAGNE-HEAD

DATA BULLETIN

D50 SERIES AIRBORNE MAGNETIC MEMORY DRUMS

FEATURES:

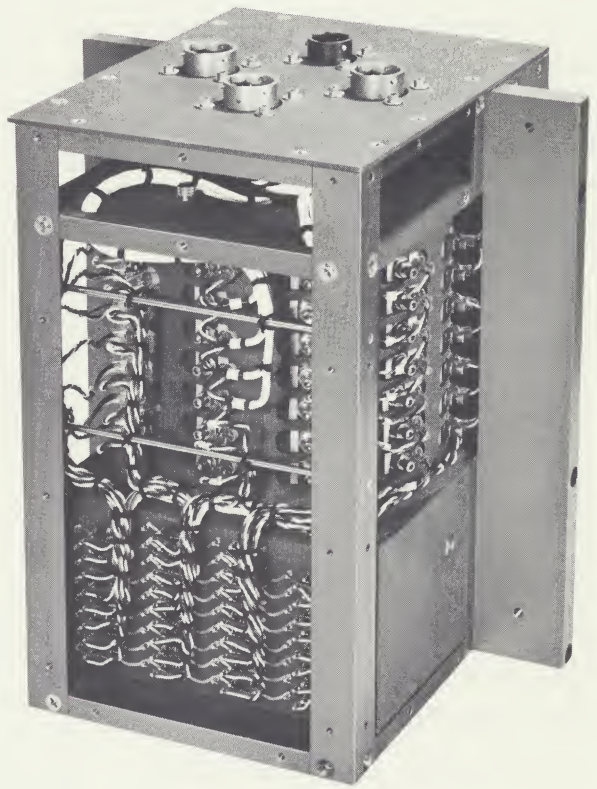
● DEPENDABILITY: *Plated metal magnetic coating provides the optimum recording surface—hard and durable.*

● CONVENIENCE: *Record-play heads may be inserted while the drum is running, with no radial adjustment.*

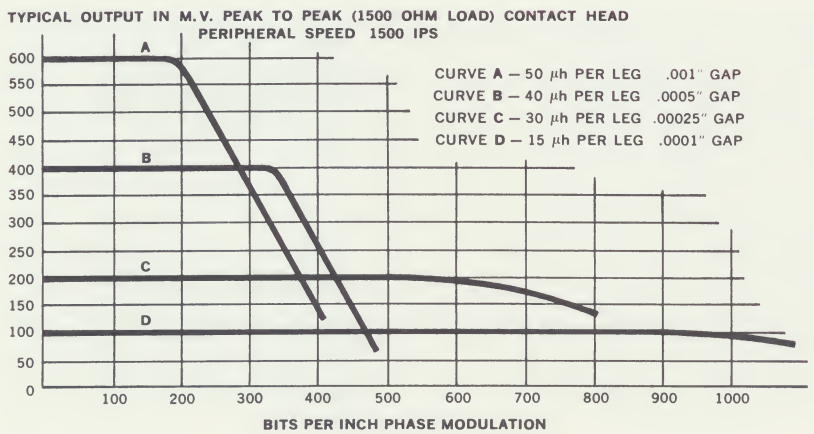
● CAPACITY: *Bit packing densities to 2000 per inch NRZ (1000 per inch phase modulation, R.B., or R.Z.)*

● SIGNAL TO NOISE RATIO: *26 db.*

● VERSATILITY: *Compliance with applicable military specifications—ground, shipboard, airborne.*



Typical D50 Series drum—4″ diameter, 3600 RPM. Other diameters available in the D50 Series from 3″ to 6″.



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D50 DRUM

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For military systems, D50 Series drums are designed to meet these typical specifications:

Ground Based:	MIL-E-4970A and MIL-E-4158B
Shipboard:	MIL-E-16400E
Airborne:	MIL-E-5400

D50 DESIGN DATA

DIAMETER:	3 to 6 inches
LENGTH:	1 to 10 inches
ECCENTRICITY:	Less than .000050 inches
BEARINGS:	Class 9; factory sealed and lubricated
MOTOR:	Custom designed integral motor, induction or synchronous
ROTATION SPEED:	Speed limits are set by rotating member diameter. Maximum speed for D50 Series drums is 24,000 RPM, at a diameter of 3 inches.
TRACKS PER INCH:	40 nominal
TOTAL STORAGE CAPACITY:	Approximate storage capacity ranges between these limits, according to drum size: 3″ diameter x 1″ length—270,000 bits phase modulation 12″ diameter x 18″ length—5,400,000 bits phase modulation
MAXIMUM CLOCK RATE:	2 megacycles
MAGNETIC MEDIUM:	Hard nickel-cobalt plate. By becoming an integral part of the rotating member, the plated surface eliminates dusting and flaking problems inherent with iron oxide coatings. Extreme surface hardness greatly reduces susceptibility to catastrophic failure should foreign matter come in contact with the rotating member.

FOR THE FULL STORY: write or call Magne-Head—area code 213—772-2351/TWX 910-325-6203

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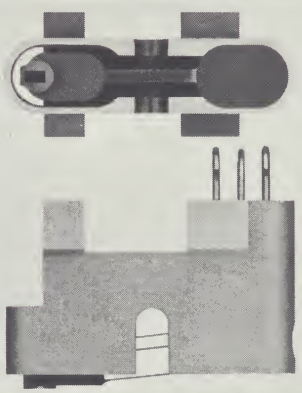

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